

# ATTACHMENT

Docket No.: 21058/0206758-US0  
(PATENT)

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Scott SIBBETT et al.

Application No.: 10/815,346

Filed: March 31, 2004

For: FABRICATION AND USE OF  
SEMPERMEABLE MEMBRANES AND  
GELS FOR THE CONTROL OF  
ELECTROLYSIS

Confirmation No.: 8293

Art Unit: 1753

Examiner: A. D. Fick

### PROPOSED CLAIM AMENDMENTS FOR 9/10/07 TELEPHONIC INTERVIEW

Dear Sir:

The following proposed claim amendments are submitted for discussion purposes for a telephonic interview that is to be conducted September 10, 2007 regarding the outstanding Office Action dated June 11, 2007. Applicants propose amending the claims as follows:

**PROPOSED CLAIM AMENDMENTS**

1. (Currently amended) A microfluidic device comprising:  
a unitary body comprising a first fluid passage; a second fluid passage; a membrane positioned separating the first fluid passage from the second fluid passage and in communication with the first fluid passage and the second fluid passage;  
a first electrode positioned in the first fluid passage; and  
a second electrode positioned in the second fluid passage;  
wherein a potential applied to the first and second electrodes passes electrons from the first fluid passage to the second fluid passage through the membrane,  
~~further wherein the first fluid passage intersects the second fluid passage where the membrane is positioned separating the first fluid passage and the second fluid passage,~~  
wherein the first fluid passage includes one or more first reservoirs and the first electrode is positioned in one of the first reservoirs, and  
wherein the first fluid passage, the membrane and the second fluid passage form a 3-level structure with the first passage and the second passage separated by the membrane.
2. (Original) The device of claim 1, wherein the body is polymethylsiloxane material (PDMS).
3. (Original) The device of claim 1, wherein the membrane is a gel made of agarose.
4. (Original) The device of claim 1, wherein the membrane is a semipermeable membrane made of regenerated cellulose.
5. (Canceled).

6. (Previously Presented) The device of claim 1, wherein the second fluid passage includes one or more second reservoirs and the second electrode is positioned in one of the second reservoirs.

7 to 24. (Canceled).

25. (New) The device of claim 1, further comprising an elongated membrane passage disposed within the unitary body, the elongated membrane passage positioned between and contacting the first fluid passage and the second fluid passage.

26. (New) The device of claim 25, wherein the first fluid passage, the second fluid passage and the membrane passage are elongated cylindrical passages wherein an out diameter of the first fluid passage and an outer diameter of the second fluid passage contact the membrane passage.

27. (New) The device of claim 25, wherein the membrane is a gel plug.

28. (New) The device of claim 25, wherein the elongated membrane passage extends across the unitary body from a first side surface of the unitary body to a second side surface of the unitary body.

29. (New) The device of claim 1, wherein the membrane extends across the unitary body from a first side surface of the unitary body to a second side surface of the unitary body.